

WHAT IS CLAIMED IS:

- SUB A2* 1. A method of modeling of the visible world using full-surround image data, said method comprising steps for:
selecting a view point within a p-surface; and
texture mapping full-surround image data onto said p-surface such that the resultant texture map is substantially equivalent to projecting full-surround image data onto the p-surface from said view point to thereby generate a texture mapped p-surface.
- 5 2. The method as recited in claim 1, further comprising the step of rotating said texture mapped p-surface so as to simulate rotating the direction of view in the opposite direction.
3. The method as recited in claim 1, wherein said selecting step comprises selecting the view point and a direction of view, and wherein said method further comprises the step of interactively changing said direction of view to thereby expose a corresponding portion of said texture mapped p-surface.
4. The method as recited in claim 1, further comprising the step of displaying a predetermined portion of said texture mapped p-surface.
5. The method as recited in claim 4, wherein the viewer is allowed to interactively alter at least one of focal length or an angle of view relative said textured mapped p-surface to thereby vary the displayed portion of said texture mapped p-surface.
6. The method as recited in claim 1, further comprising the steps of:
selecting a new viewpoint; and
repeating said texture mapping step using said new viewpoint.

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7. The method as recited in claim 6, wherein the resultant viewpoint is close to the surface of said p-sphere.

8. The method as recited in claim 6, wherein said selecting step comprises interactively selectively said new viewpoint.

9. The method as recited in claim 8, wherein a first said texture mapped p-sphere is replaced by a second texture mapped p-sphere by interactively selecting said new viewpoint from viewpoints within said second texture mapped p-sphere.

10. A method of modeling of the visible world using full-surround image data, said method comprising steps for:

providing said full surround image data;

selecting a view point within a p-surface;

texture mapping full-surround image data onto said p-surface such that the resultant texture map is substantially equivalent to projecting full-surround image data onto the p-surface from said view point to thereby generate a texture mapped p-surface; and

displaying a predetermined portion of said texture mapped p-sphere.

11. The method as recited in claim 10, further comprising the step of rotating said texture mapped p-surface so as to simulate rotating the direction of view in the opposite direction.

12. The method as recited in claim 10, wherein said selecting step comprises selecting the view point and a direction of view, and wherein said method further comprises the step of interactively changing said direction of view to thereby display another portion of said texture mapped p-surface.

13. The method as recited in claim 10, further comprising the steps of:

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selecting a new viewpoint; and
repeating said texture mapping step using said new viewpoint.

14. The method as recited in claim 13, wherein said selecting step comprises interactively selectively said new viewpoint.

15. The method as recited in claim 13, wherein a first said texture mapped p-sphere is replaced by a second texture mapped p-sphere by interactively selecting said new viewpoint from viewpoints within said second texture mapped p-sphere.

16. An apparatus for modeling the visible world using full-surround image data, comprising:
means for selecting a view point within a p-surface;
means for texture mapping full-surround image data onto said p-surface such that the resultant texture map is substantially equivalent to projecting full-surround image data onto the p-surface from said view point to thereby generate a texture mapped p-surface; and
means for displaying a predetermined portion of said texture mapped p-sphere.

17. The apparatus as recited in claim 16, wherein said selecting means comprises means for selecting said view point and interactively selecting a direction of view to thereby interactively display portions of said texture mapped p-surface.

18. The apparatus as recited in claim 16, wherein said selecting means provides for interactive selection of said viewpoint.

19. The apparatus as recited in claim 17, further comprising means for replacing a first said texture mapped p-sphere by a second texture mapped p-sphere by interactively selecting said viewpoint from a plurality of viewpoints within said second texture mapped p-sphere.

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